

WATER SUMMIT 2007

July 30, 2007

Water Supply/Environmental Regulation Schedule or WSE FREQUENTLY ASKED QUESTIONS

What is a regulation schedule?

A regulation schedule is a federally authorized tool used by water managers to manage the water levels in a lake or reservoir. Typically, a regulation schedule has water level thresholds that vary with time of year and trigger discharges (a.k.a., regulatory releases). The threshold lines of regulation schedules define the release zones and are traditionally displayed graphically; a corresponding table is typically used to identify the structure discharge rules for the release zones. Regulatory discharges are made primarily to protect the integrity of the surrounding levees and developed areas, and are also made to lower water levels in preparation for wet season inflows.

For multiple-purpose lakes and reservoirs, regulation schedules are designed to balance competing objectives including water supply, flood control, navigation, and environmental enhancement. Thus, managing for better performance of one objective often leads to poorer performance in satisfying competing objectives. For example, higher regulation schedules benefit water supply, but may harm the ecology of the lake. Lower lake schedules may produce stages more desirable for the lake ecology and for better flood protection, but reduce water supply potential.

It is important to also recognize that although water supply benefits are affected by a regulation schedule, water supply deliveries are not triggered by a regulation schedule. A regulation schedule typically triggers flood control releases. Water supply deliveries are made under other authorizations (e.g., Chapter 373, Florida Statutes).

What is the WSE regulation schedule?

Water releases from Lake Okeechobee to the estuaries are made in accordance with a federally authorized regulation schedule called the Water Supply/Environmental Regulation Schedule or WSE. The WSE is a tool used by the U.S. Army Corps of Engineers, with input from the South Florida Water Management District, to manage the water levels in Lake Okeechobee.

The WSE schedule was developed in 2000 to improve lake habitat and water supply, without impacting the other lake management objectives. This was accomplished, in part, with the aid of the newly available longer-term climate outlooks made available by the Climate Prediction Center (CPC). Typically, the regulation schedule determines water level thresholds which vary with time of year and trigger discharges to the estuaries (a.k.a., regulatory releases). The threshold lines of the WSE define the release zones and are displayed graphically (Figure 1). Additionally, a corresponding table is used to identify the discharge rules by the release zones for the water control structures.

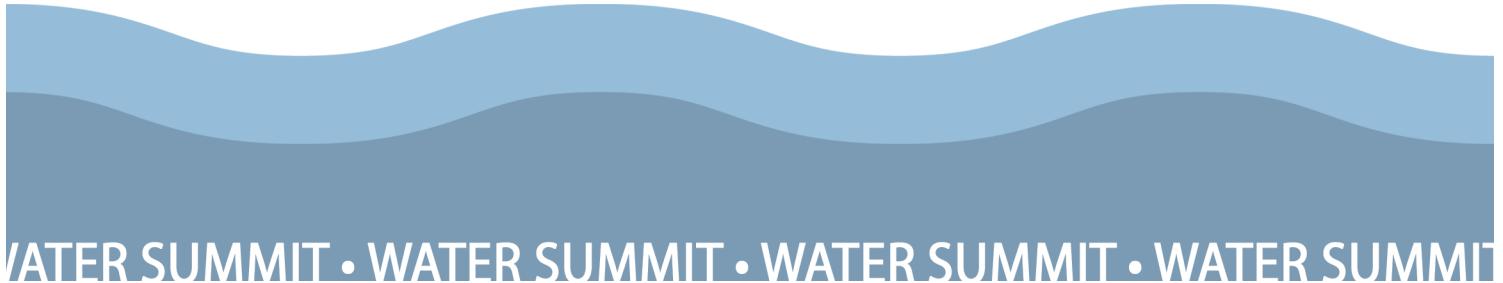
The water control and navigation structures along Lake Okeechobee are federal structures owned and operated by the U.S. Army Corps of Engineers. Each week before the Corps concludes if releases are required, an environmental advisory team of South Florida Water Management District scientists provides the Corps with input and recommendations regarding environmental and hydrological conditions, as well as weather forecasts and climate information to balance both the environmental needs with the flood control release needs.

Although several key water control structures are under the jurisdiction of the U.S. Army Corps of Engineers (specifically Lake Okeechobee's major outlets and navigation structures) water management decisions relative to the operation of the majority of the regional water management system (Central & Southern Florida Project) are made by the South Florida Water Management District.

To help achieve a better balance among Lake Okeechobee management objectives and the competing needs of the lake, estuaries and greater Everglades ecosystem – the U.S. Army Corps of Engineers is expediting modifications to the Lake Okeechobee Water Control plan, including revising the regulation schedule. The process is called the Lake Okeechobee Regulation Schedule Study (LORSS). (Please see enclosed LORSS fact sheet.)

What is an Operational Decision Tree?

The WSE regulation schedule includes an Operational Decision Tree that synthesizes information to guide release decisions. The Decision Tree utilizes tributary hydrologic conditions along with the official meteorological forecasts and the seasonal to multi-seasonal climate outlooks published by Climate Prediction Center (CPC). The Decision Tree is divided into two parts. Part 1 (Figure 2) defines Lake Okeechobee discharges to the Water Conservation Areas, and Part 2 (Figure 3) defines Lake Okeechobee discharges through the Caloosahatchee and St. Lucie rivers to the respective estuaries. The WSE also has built-in flexibility that allows adjustments to be made in the timing and magnitude of regulatory discharges based on conditions in the estuaries and the Everglades.



What if the climate outlooks/forecasts are not accurate?

The developers of the WSE schedule recognized the limitations of climate outlooks and built features into the decision tree to guard against inaccurate forecasts. Climate outlooks are expressed by the CPC as probabilities of being wetter or drier than normal. The outlooks do not quantify future precipitation amounts, but they do quantify the chance that the future precipitation will be above or below normal. In general, the decision tree first considers the lake water level and tributary hydrologic conditions before considering the longer-range climate outlooks. For example, a wet climate outlook would normally not call for releases to tidewater if the tributary hydrology were dry. Thus, the risks associated with the use of imperfect forecasts are reduced.

Does WSE maximize water supply benefits?

No. WSE, as any regulation schedule, must balance the multiple competing objectives for use of the lake. WSE was designed to maintain water supply benefits, but it does not provide the optimal water level management for water supply.

Does WSE maximize environmental benefits for the lake?

No. WSE, as any regulation schedule, must balance the multiple competing objectives for use of the lake. WSE was designed to improve water level conditions that would enhance the lake's health, but it does not provide the optimal water level management for the lake's ecology.

Does WSE eliminate all releases to the estuaries?

No. WSE slightly reduces the frequency and duration of large continuous discharges; but more frequent, small "pulse releases" are expected to occur. Under the WSE schedule, both small and large releases to the estuaries are still necessary to balance the competing lake management objectives.

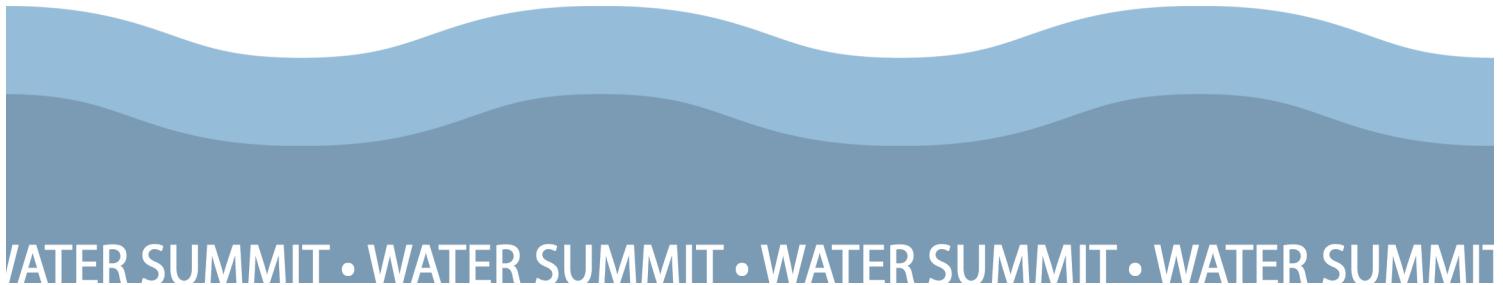
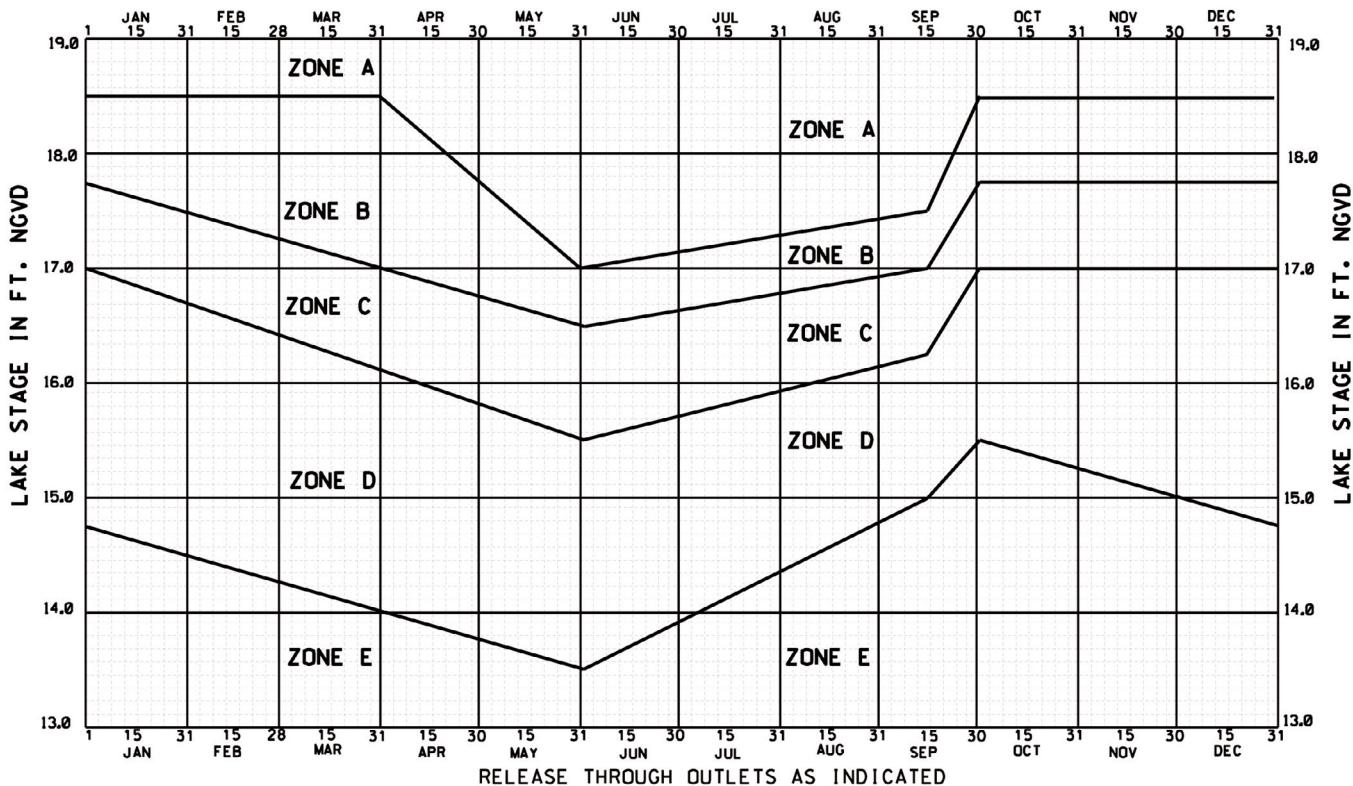


FIG. 1



ZONE	AGRICULTURAL CANALS TO WCAs (1.2)	CALOOSAHATCHEE RIVER AT S-77 (1,2,4)	ST. LUCIE CANAL AT S-80 (1,2,4)
A	PUMP MAXIMUM PRACTICABLE	UP TO MAXIMUM CAPACITY	UP TO MAXIMUM CAPACITY
B (3)	MAXIMUM PRACTICABLE RELEASES	RELEASES PER DECISION TREE (THESE CAN RANGE FROM MAXIMUM PULSE RELEASE UP TO MAXIMUM CAPACITY)	RELEASES PER DECISION TREE (THESE CAN RANGE FROM MAXIMUM PULSE RELEASE UP TO MAXIMUM CAPACITY)
C (3)	MAXIMUM PRACTICABLE RELEASES	RELEASES PER DECISION TREE (THESE CAN RANGE FROM NO DISCHARGE UP TO 6500 CFS)	RELEASES PER DECISION TREE (THESE CAN RANGE FROM NO DISCHARGE UP TO 3500 CFS)
D (3.5)	AS NEEDED TO MINIMIZE ADVERSE IMPACTS TO THE LITTORAL ZONE WHILE NOT ADVERSELY IMPACTING THE EVERGLADES. (SEE NOTE 5.)	RELEASES PER DECISION TREE (THESE CAN RANGE FROM NO DISCHARGE UP TO 4500 CFS)	RELEASES PER DECISION TREE (THESE CAN RANGE FROM NO DISCHARGE UP TO 2500 CFS)
E	NO REGULATORY DISCHARGE	NO REGULATORY DISCHARGE	NO REGULATORY DISCHARGE

NOTES: (1) SUBJECT TO FIRST REMOVAL OF RUNOFF FROM DOWNSTREAM BASINS

(2) GUIDELINES FOR WET, DRY AND NORMAL CONDITIONS ARE BASED ON: 1) SELECTED CLIMATIC INDICES AND TROPICAL FORECASTS AND 2) PROJECTED INFLOW CONDITIONS. RELEASES ARE SUBJECT TO THE GUIDELINES IN THE WSE OPERATIONAL DECISION TREE, PARTS 1 AND 2.

(3) RELEASES THROUGH VARIOUS OUTLETS MAY BE MODIFIED TO MINIMIZE DAMAGES OR OBTAIN ADDITIONAL BENEFITS. CONSULTATION WITH EVERGLADES AND ESTUARINE BIOLOGISTS IS ENCOURAGED TO MINIMIZE ADVERSE EFFECTS TO DOWNSTREAM ECOSYSTEMS.

(4) PULSE RELEASES ARE MADE TO MINIMIZE ADVERSE IMPACTS TO THE ESTUARIES
(5) ONLY WHEN THE WCAs ARE BELOW THEIR RESPECTIVE SCHEDULES

CENTRAL AND SOUTHERN FLORIDA
INTERIM REGULATION SCHEDULE
LAKE OKEECHOBEE

DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT
CORPS OF ENGINEERS, JACKSONVILLE, FLORIDA
DATED: 5 NOVEMBER 1999

WSE (WITH CLIMATE OUTLOOK)

FIG. 2

WSE Operational Guidelines Decision Tree

Part 1: Define Lake Okeechobee Discharges to the Water Conservation Areas

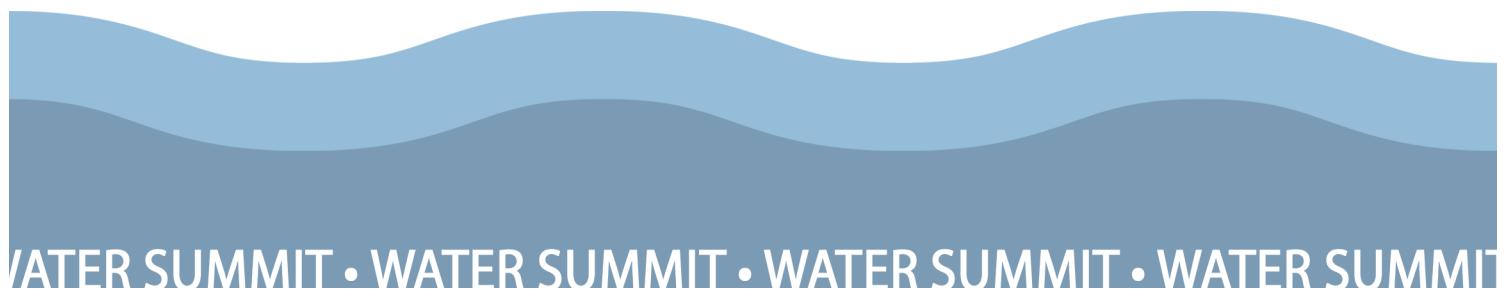
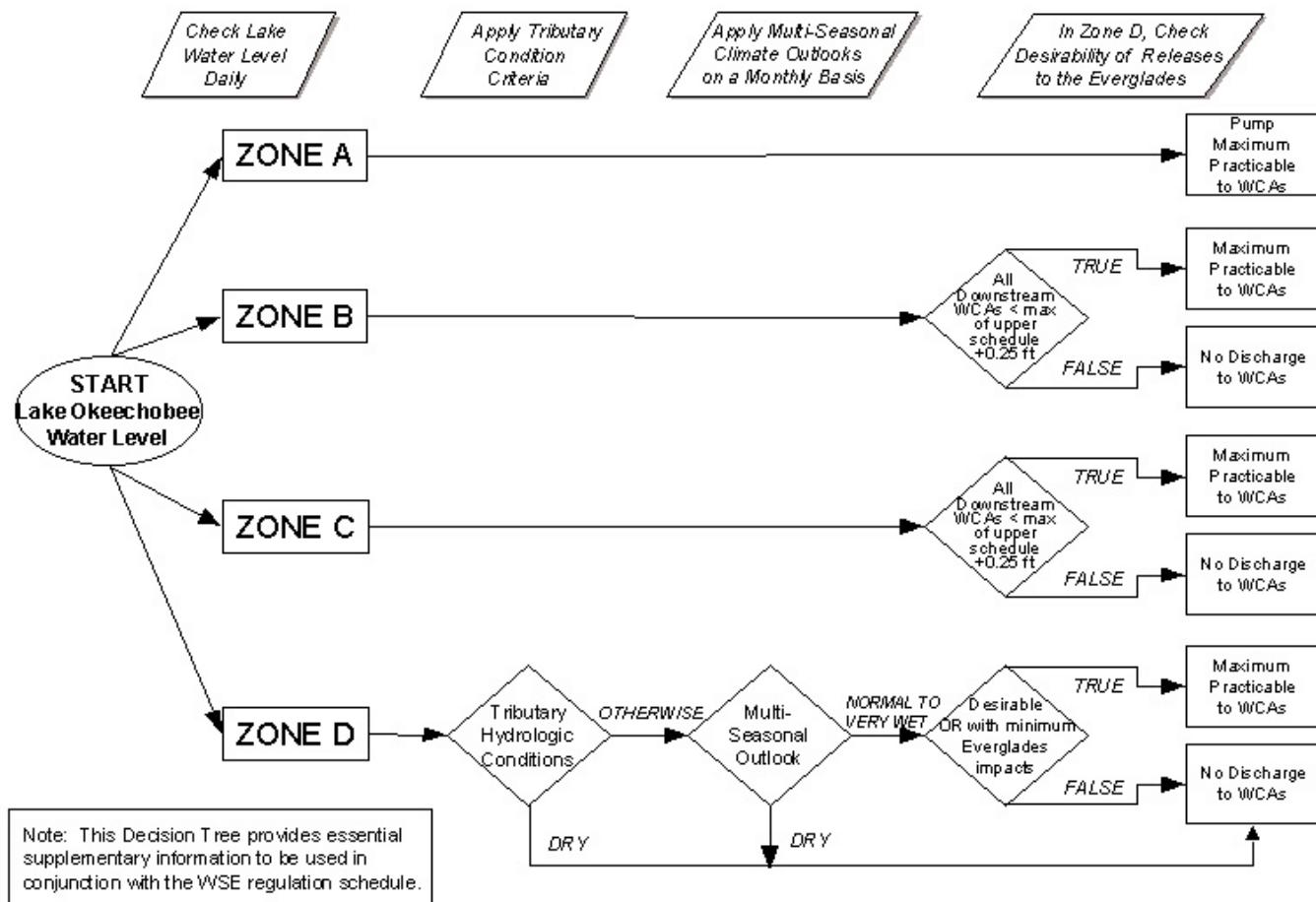


FIG. 3

WSE Operational Guidelines Decision Tree

Part 2: Define Lake Okeechobee Discharges to Tidewater (Estuaries)

